Module 26
Operations

Learning Objectives

By the end of this section, you will:

1. Know what OSHA requires to leave a crane unattended.
2. Understand the precautions for heavy weather.
3. Know good practices while operating a mobile crane.

The "employer" must comply with all manufacturer procedures applicable to the operational functions of equipment.

OSHA® 1926.1417(a)

Operating procedures must be readily available in the cab at all times for use by the operator.

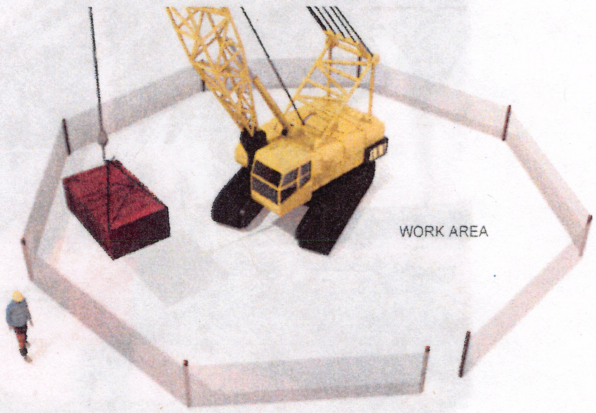
OSHA® 1926.1417(c)(1) & (2)

- Load charts.
- Recommended operating speeds.
- Special hazard warnings.
- Operator's manual.

Actual standard:

Accessibility of procedures. 1926.1417(c)(1) The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator's manual, must be readily available in the cab at all times for use by the operator.

Where rated capacities are available in the cab only in electronic form: In the event of a failure which makes the rated capacities inaccessible, the operator must immediately cease operations or follow safe shut-down procedures until the rated capacities (in electronic or other form) are available.



Before starting the engine, the operator must verify that all controls are in the proper starting position and that all personnel are in the clear.

The operator must not engage in any activity that diverts his/her attention while operating the equipment, such as the use of cellular phones.

OSHA 1926.1417(d)

What is the exception?

» OSHA allows cell phone use for signal communications.

The boom or other parts of the equipment must not contact any obstruction.

What must you do to leave a crane unattended?

OSHA 1926.1417(e)

» Competent person must determine it is safe and implement measures necessary to restrain the boom hoist and telescoping, load, swing, and outrigger functions.

» Erect barricades or caution lines to prevent all employees from entering the fall zone.

Any equipment taken out of service must have a tag in the cab.

Do not operate until the sign is removed by an authorized person or you verify that:

- No one is servicing the machine.
- The equipment has been repaired.

OSHA 1926.1417(f)(1)

Use taglines to prevent rotation of a load that would be hazardous.

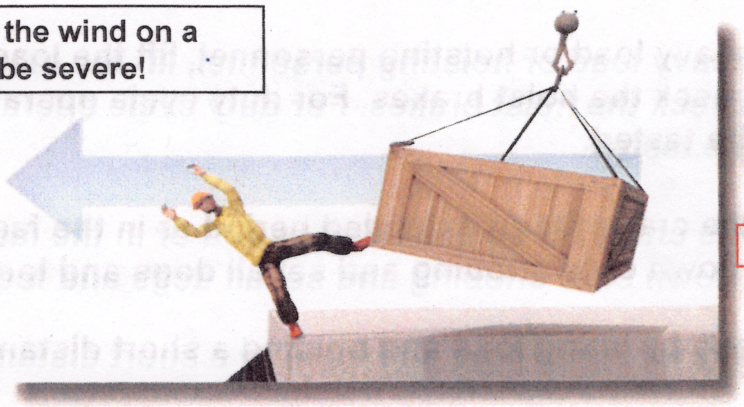
OSHA 1926.1417(q)

The equipment must not be used to drag or pull loads sideways.

During local storm warnings, the competent person must determine whether to implement manufacturer's recommendations for securing the equipment.

Competent person must address the effects of wind, ice and snow on equipment stability and rated capacity.

The effect ot the wind on a load can be severe!



OSHA®
1926.1417(n)

Good Operating Practices

NEVER make a pick on rubber with the LMI set for "on outriggers."

Do not back up unless you can clearly see or have a spotter.

Use caution swinging over the side at high boom angles. Truck cranes and heavy counterweighted cranes may not have sufficient rearward stability.

Many newer cranes will not start if the parking brake isn't set. Outrigger controls also may not function unless the parking brake is set.

The outriggers may need to be set before the LMI will allow itself to be set to "on outriggers."

Don't change winch high/low settings while hoisting, this could damage the hydraulic system.

The engine must usually be off to shift the PTO in or out. Extended travel will require the power take off to be disengaged or pump damage will occur.

Land the load if possible in the event of a power failure.

Use higher boom angles when extending/retracting pin boom type cranes.

If the boom angle is too low, the sections could become mechanically locked and cause a fault requiring manual retraction and a reset.

Do not lubricate, repair, or perform maintenance on a crane while it is running.

When lifting a heavy load or hoisting personnel, lift the load a few inches then hold it to check the hoist brakes. For duty cycle operations only the first pick need be tested.

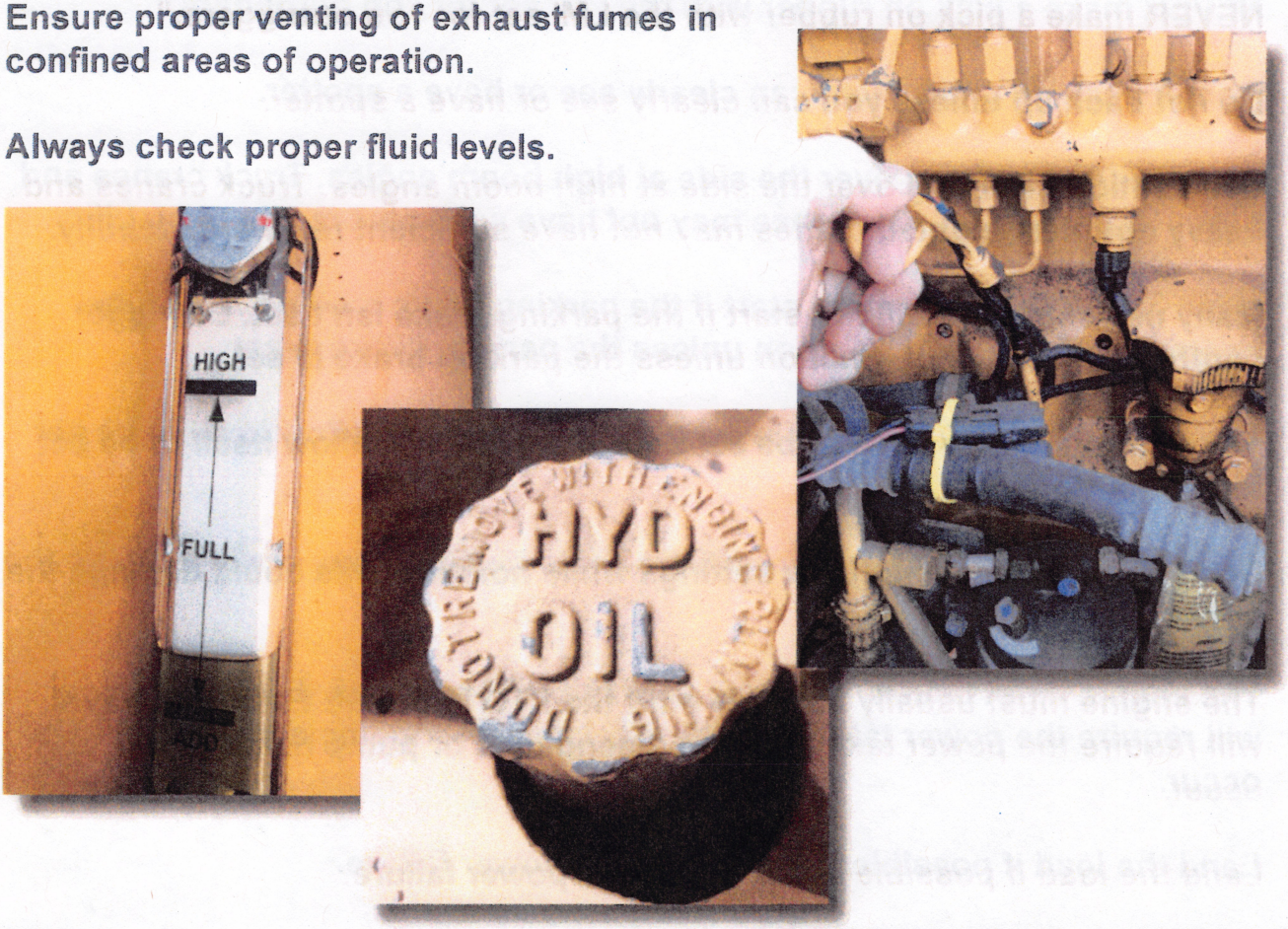
When parking the crane for an extended period or in the face of extreme weather, boom down onto cribbing and set all dogs and locks.

Check hoist brake by lifting load and holding a short distance from ground.

When lifting on rubber, brakes should be locked, transmission left in neutral and axle lockout engaged.

Ensure proper venting of exhaust fumes in confined areas of operation.

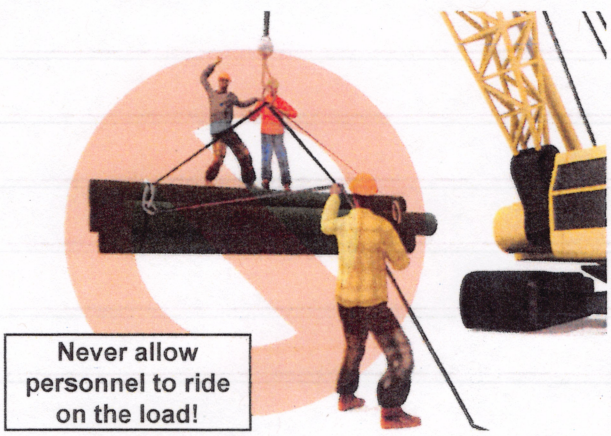
Always check proper fluid levels.



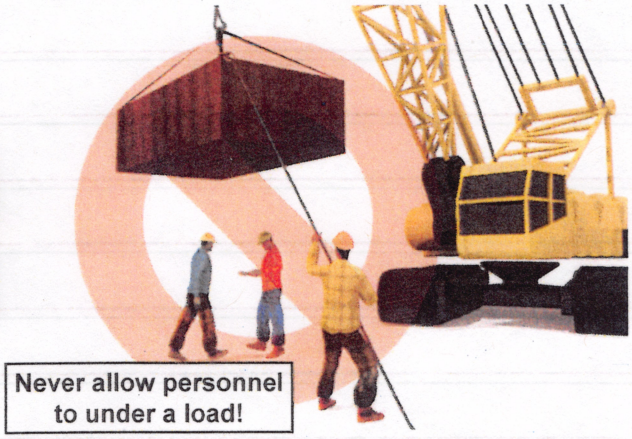
No one should ever ride on hook or load.

Operator should keep foot on hoist brake at all times.

Avoid swinging load over personnel.



Never allow personnel to ride on the load!



Never allow personnel to under a load!

What must be done if equipment adjustments or repairs are needed?

» The operator must inform in writing the designated person and the next operator (if a second shift).

» The employer must notify all affected employees at the beginning of each shift.

OSHA® 1926.1417(j)

What are the methods that the operator can use to verify that the load is within the rated capacity of the equipment?

» 1926.1417(o)(3)(i) The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. In addition, when requested by the operator, this information must be provided to the operator prior to the lift; or

OSHA® 1926.1417(o)

» 1926.1417(o)(3)(ii) The operator must begin hoisting the load to determine, using a load weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter, if the load exceeds 75 percent of the maximum rated capacity at the longest radius that will be used during the lift operation. If it does, the operator must not proceed with the lift until he/she verifies the weight of the load in accordance with paragraph (o)(3)(i) of this section.

Notes: